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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,282	05/01/2001	Yukihiko Sakashita	35.C15336	3070

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EXAMINER

NGUYEN, KIMNHUNG T

ART UNIT	PAPER NUMBER
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2677

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/845,282

Applicant(s)

SAKASHITA, YUKIHIKO

Examiner

Kimnhung Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-6,9,13,17,21,24 and 42 is/are allowed.
- 6) ☒ Claim(s) 1-3,7,8,10-12,14-16 and 25-54 is/are rejected.
- 7) ☒ Claim(s) 18-20,22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Application has been examined. The claims 1-54 are pending. The examination results are as following.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 7-8, 10-12, 14-16 and 25-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuda (US 5,896,163).

Regarding claims 1 and 39, Tsuda et al. discloses in figure 1, a display apparatus for irradiating with light generated by a light source a light modulating element and forming a display image plane from the light (see a laser liquid crystal maker with a projects light connected to controller (7) and display on the liquid crystal, see column 4, lines 18-27 and column 6, lines 8-24) which is transmitted through or reflected by the light modulating element, comprising input image calculating means (7) for performing predetermined calculation according to an input display signal; light quantity controlling means (R1) for controlling light quantity irradiated onto said light modulating element according to a result of said calculation (because the light quantity irradiated onto the light element is the result of the controller 7, see figures 1-2C, see column 7, lines 31-37); and a memory for storing the display signal subjected to the calculation by said input image calculating means, and thereafter for outputting the display

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signal to said light modulating element (see software construction, see figures 2A, 3 and 5-6, see column 6, lines 38-45).

Regarding claims 2 and 40, Tsuda et al. discloses in figure 1, a display apparatus for irradiating light generated by a light source (see laser beam 12) onto a light modulating element inputting modulated signal formulated by converting a display signal inputted in an analog state into digital display signals and thereafter subjecting the digital display signal to a predetermined processing, and for forming a display image plane from the light transmitted through the light modulating element (see column 6, lines 8-24), comprising input image calculating means for performing predetermined calculation according to the display signal; light quantity controlling means for controlling light quantity (Q_i) irradiated onto said light modulating element according to a result of said calculation; and an adjusting circuit (see adjusting voltage V_i , see abstract, see column 4, lines 5-10) for adjusting the display signal according to a result of the calculation, wherein said adjusting circuit adjusts the display signal before the display signal in said analog state are converted into digital display signal.

Regarding claims 3 and 41, 43, 47, 51, Tsuda et al. discloses a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane with the light transmitted through or reflected by the light modulating element, comprising input image calculating means for performing a predetermined calculation according to an input display signal; and light quantity controlling means for controlling light quantity irradiated onto said light modulating element according to a result of the calculation as discusses

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above, wherein said light quantity controlling means sets a change rate of light quantity, such that an inherent the change rate at decreasing the light quantity is smaller than a change rate at increasing the light quantity (because the rate of light quantity depends on applied voltage V_i , (see column 4, lines 47-50).

Regarding claims 7-8, Tsuda et al. discloses the display apparatus further comprising an adjusting circuit for adjusting display signal according to a result of the calculation (see adjusting voltage V_i).

Regarding claims 10-12, Tsuda et al. discloses further wherein said calculation is calculation to give maximum luminance in said display signals inputted within a predetermined period (see figure 6, column 8, lines 44-55).

Regarding claims 14-16, Tsuda et al. discloses further the calculation is calculation to give an inherent number of data exceeding a predetermined luminance among luminance data included in said display signals inputted within a predetermined period include (see column 5, lines 8-10)

Regarding claims 25-28, Tsuda et al. discloses the display apparatus comprising means for setting quantity of changing irradiation light quantity, so as to set changing quantity or change rate of said irradiating light quantity (see voltage V_i).

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Regarding claims 29-30, Tsuda et al. discloses the display apparatus wherein said change rate is greater in a trend to increase irradiation light quantity than in a trend to decrease irradiation light quantity (see voltage Vi):

Regarding claims 31-34, Tsuda et al. discloses the display apparatus, wherein the light quantity controlling means are means to be disposed between said light source and said light modulating element to control light quantity to be irradiated onto said light modulating element from the light source (see figure 1).

Regarding claims 35-38, Tsuda et al. discloses the display apparatus, wherein said light quantity controlling means is means to control voltage (see voltage Vi.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 44-46, 48-49 and 52-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (5,896,163) in view of Moroney et al. (US 6,813,041).

Tsuda et al. discloses every feature of the claimed invention as discussed, excluding the control value is determined to provide a boarder dynamic range than a dynamic range where the control value is not used to conduct control, and control value comprising a diaphraram.

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Moroney et al. discloses a system for correction image having a boarder dynamic range, the control could have an inherent diaphragm (see col. 7, lines 24-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the using a boarder dynamic range as taught by Moroney et al. because this would provide an ideal solution to improve quickly the image quality in these situations.

Allowable Subject Matter

6. Claims 4-6, 9, 13, 17, 21, 24 and 42 are allowed.

7. Claims 18-20, 22-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane from the light transmitted though or reflected by said light modulating element, comprising input image calculating means for performing a predetermined calculation according to an input display signals; and light quantity controlling means for increasing or decreasing a light quantity irradiated onto said light modulating element step by step according to a value determined by result of said calculation. The combination of closest prior art, Tsuda et al. (US 5,896,163) and Hasegawa et al. disclose a similar system, they also discloses a display apparatus for irradiating light generated by a light source onto a light modulating element, and for forming a display image plane from the light transmitted though or reflected by said light modulating element,

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comprising input image calculating means for performing a predetermined calculation according to an input display signals. However, they fail to teach the system wherein the threshold value at which said light quantity controlling means increases the light quantity from a first stage being a predetermined stage into a second stage increased therefrom by one step according to the calculation is different from a threshold value at which said light quantity controlling means decreases the light quantity from the second stage into a stage of smaller light quantity as claims 4 and 42; or the sensors for detecting light quantity irradiated onto the light modulating element, wherein the light quantity controlling means controls the light quantity based on the calculation results and a detection results by the sensors as claims 18-20, 22-23.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response To Arguments

9. Applicant's arguments with respect to claims 1-54 have been considered but are moot in view of the new ground(s) of rejection.

Applicant also states that "The Examiner points to Tsuda et al., col. 7, lines 31-37 and Figs. 1, 2A, 28 and 2C for disclosing a light quantity controlling means (R1) for controlling light quantity irradiated onto said light modulating element according to a result of said calculation. Applicant, however, finds no means for directly detecting the irradiation light quantity (R1) found in Fig. 1 of the drawings. The value of the irradiation quantity (R1) is thus believed

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by Applicant to be determined from the electric quantity which the controller (7) supplies to the light emitting means for light emission. Therefore, Applicant submits that nothing in Tsuda et al. would teach or suggest a constructional feature corresponding to a light quantity controlling means for controlling light quantity irradiated onto a light modulating element according to a result of a calculation, along the lines of that set forth in claims 1-4 and 39-42 of the present invention". Examiner has disagreed because claim 1 does not require a directly detecting the irradiation light quantity.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimnhung Nguyen whose telephone number is (571) 272-7698.

The examiner can normally be reached on MON-FRI, FROM 8:30 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kimnhung Nguyen
July 26, 2005



ALEXANDER EISEN
PRIMARY EXAMINER